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Quality Engineering Test Report

SERIES: D-60 60W AC-DC DUAL OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A.D-60A +V1: 5V / 4A
+V2:12V / 3A
B.D-60B +V1: 5V / 3A
+V2:24V / 1.8A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:85~264VAC O/P:FULL LOAD	A:63VAC~264VAC	P
2	LINE REGULATION	I/P:85~264VAC SPEC: O/P:FULL LOAD A :+V1 :±0.5% +V2 :±1% B :+V1 :±0.5% +V2 :±0.5%	A: +V1: 0%~0% +V2: -0.05%~+0.1% B: +V1: -0.12%~+0.12% +V2: -0.02%~+0.18%	P
3	LOAD REGULATION	I/P:230VAC SPEC: O/P:MIN. TO FULL LOAD A : +V1 : ±0.5% +V2 : ±4% B : +V1 : ±0.5% +V2 : ±4%	A: +V1: 0%~0% +V2: -0.15%~+0.56% B: +V1: 0%~0% +V2: -0.57%~+0.78%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:230VAC SPEC: O/P:MIN. TO FULL LOAD A : +V1 : ±2% +V2 : ±6% B : +V1 : ±2% +V2 : ±5%	A: +V1: 0%~+0.12% +V2: -1.62%~+4.12% B: +V1: -0.12%~+0.12% +V2: -1.44%~+3.52%	P
5	RIPPLE&NOISE	I/P:230VAC SPEC: O/P:FULL LOAD A :+V1 :75mV +V2 :150mV B :+V1 :75mV +V2 :150mV	A: +V1: 23mV +V2: 13mV B: +V1: 25mV +V2: 20mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC:1A O/P:FULL LOAD	A:0.71A	P
7	MAX. INRUSH CURREN	I/P:230VAC SPEC:60A O/P: FULL LOAD	A:36.9A	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: O/P:MIN. LOAD A:+V1 -5%~+10% B:+V1 -5%~+10%	A: +V1: 4.48V~5.86V +V2: 10.60V~13.91V B: +V1: 4.38V~5.75V +V2: 20.75V~27.08V	P
9	SET UP TIME	I/P:230VAC SPEC:300mS O/P:FULL LOAD	A: +V1:230.2mS	P
10	HOLD UP TIME	I/P:230VAC SPEC:80mS O/P:FULL LOAD	A: +V1:101.3mS	P
11	EFFICIENCY	I/P:230VAC SPEC: A:73% O/P:FULL LOAD B:76%	A:74.43% B:76.45%	P
12	OVER LOAD PROTECTION	I/P:230VAC SPEC:105%~150% O/P:TESTING	A:138% B:141%	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC SPEC:+V1:5.75~6.75V O/P:FULL LOAD	A : +V1: 6.3V B : +V1: 6.2V	P
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<1mA N-FG--<1mA	A: L-FG:1.91 mA N-FG:1.85mA	P
15	INSULATION RESISTANCE	SPEC: O/P-FG 500VDC/100M Ohms MIN. I/P-O/P 500VDC/100M Ohms MIN. I/P-FG 500VDC/100M Ohms MIN.	A: O/P-FG >100M Ohms I/P-O/P >100M Ohms I/P-FG >100M Ohms	P
16	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P- O/P: 3000VAC/ 1 min. (10mA CUT-OFF) I/P - FG: 1500VAC/ 1 min. (10mA CUT-OFF) O/P - FG: 500VAC/ 1 min. (10mA CUT-OFF)	A: I/P-O/P :4.2mA I/P-FG :6.3mA O/P-FG :2.5mA	P

NEXT

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION / SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td rowspan="2">17</td><td rowspan="2">EMS TEST</td><td>EFT TEST:
EN50082-1 IEC1000-4-4</td><td>A: CRITERIA A OK</td><td>P</td></tr>
<tr><td>SURGE TEST:
EN50082-1 IEC1000-4-5</td><td>A: CRITERIA A OK</td><td>P</td></tr>
<tr><td>18</td><td>BURN-IN TEST</td><td>I/P: 230VAC O/P:FULL LOAD
TA:22.5°C BURN-IN DURATION : 4 hrs</td><td>NON BREAK</td><td>P</td></tr>
<tr><td rowspan="3">19</td><td rowspan="3">ENVIRONMENT TEST
(SAMPLE A:)</td><td>1.LOW TEMPERATURE TEST
I/P:80 VAC O/P:FULL LOAD
AMBIENT TEMPERATURE:-10°C</td><td>AFTER 1 hrs
POWER ON OK</td><td rowspan="3">P</td></tr>
<tr><td>2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST
I/P:230VAC O/P:FULL LOAD
AMBIENT TEMPERATURE:45°C</td><td>AFTER 15 hrs
NON BREAK</td></tr>
<tr><td>3.ACCELERATED LIFE TEST
I/P:267VAC O/P:FULL LOAD
POWER ON :3 min POWER OFF :5 sec
AMBIENT TEMPERATURE:85°C
AMBIENT HUMIDITY:95%</td><td>AFTER 14 hrs
NON BREAK</td></tr>
<tr><td>20</td><td>TEMPERATURE RISE TEST T rise OF PARTS</td><td colspan="2">A: I/P :230VAC AFTER 4 hr BURN-IN
O/P :FULL LOAD TA:22.5°C
<table>
<tr><th></th><th>POSITION</th><th>P/N</th><th>TEMP</th><th>T rise</th></tr>
<tr><td></td><td>BD1</td><td>BRIDGE DIODE</td><td>82.1C</td><td>59.6C</td></tr>
<tr><td></td><td>Q1</td><td>MAIN TRANSISTOR</td><td>70.7°C</td><td>48.2°C</td></tr>
<tr><td></td><td>T1</td><td>MAIN TRANSFORMER</td><td>85.9°C</td><td>63.2°C</td></tr>
<tr><td></td><td>D4</td><td>O/P DIODE</td><td>75.2°C</td><td>52.7°C</td></tr>
<tr><td></td><td>C21</td><td>O/P FILTER CAPACITOR</td><td>71.6°C</td><td>49.1°C</td></tr>
<tr><td></td><td>L2</td><td>O/P CHOCK</td><td>70.4°C</td><td>47.9°C</td></tr>
<tr><td></td><td>C5</td><td>I/P FILTER CAPACITOR</td><td>81.7°C</td><td>59.2°C</td></tr>
<tr><td>*</td><td>D1</td><td>FLY DIODE</td><td>98.3°</td><td>75.8°C</td></tr>
</table></td><td>*
NOTE1</td></tr>
<tr><td>21</td><td>LIFE CYCLE</td><td colspan="2">A: SUPPOSE C21 IS THE MOST CRITICAL COMPONENT
I/P:230VAC O/P:FULL LOAD Ta:22.5°C Tc21:71.6°C Life: 49811 hrs
I/P:230VAC O/P:FULL LOAD Ta:44.6°C Tc21:90.6°C Life: 15437 hrs</td><td>P</td></tr>
<tr><td>22</td><td>CRITICAL COMPONENT RECORD
(FOR QC INSPECTION REFERENCE ONLY)</td><td colspan="3">A: FUSE :3AL/250V
BRIDGE DIODE :LT 4A/800V GLASS
LINE FILTER :EE-25 TF096C1
TRANSFOMER :EER-35 TF156-1-R1
POWER SWITCHER :2SK727 TO-3P
OUTPUT DIODE :D10SC4M TO-220
OUTPUT CAPACITOR :ELNA 1000uF/25V RJH 105°C
INPUT CAPACITOR :JAMICON 150uF/400V 85°C
P.C.B :D-60N-R3 CEM-1 2 OZ SS</td></tr>
<tr><th>DATE</th><th>SAMPLE</th><th>TEST RESULT</th><th>TEST</th><th>APPROVAL</th></tr>
<tr><td>19980418</td><td>D-60A</td><td>NOTE1:working temperature >= 45°C should derating</td><td>H.C.LIOU</td><td>Max Lin</td></tr>
<tr><td>19990510</td><td>D-60A</td><td>PASS</td><td>H.C.LIOU</td><td>Max Lin</td></tr>
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PREVIOUS